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WAKEMAP MOUND

A STRATIFIED SITE ON THE COLUMBIA RIVER

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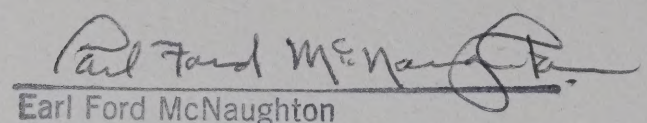

Earl Ford McNaughton

$2.00

Wakemap Mound

Lavishly illustrated account of excavations at Wakemap Mound—a stratified site on the north shore of the Columbia River at the upper end of the famous Long Narrows—revealing the extent and diversity of the great Indian culture that once existed in this geologic wonderland. Though titled, "**Wakemap Mound,**" it necessarily covers the entire area of the Narrows, for the Mound and the nearby sites are inseparable.

Tsagaglalal, "She Who Watches".
Overlooking Wakemap Mound and Wishram.

WAKEMAP MOUND

AND NEARBY SITES ON THE LONG NARROWS OF THE COLUMBIA RIVER

Editor: Emory Strong

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PLATE No. 1

Top, zoomorphic carving 18 inches long, Leachman Site. Right, petroglyph, John Day bar.

INTRODUCTION

The Wakemap Mound was a stratified site on the North shore of the Columbia River at the upper end of the famous Long Narrows, five miles above The Dalles, Oregon. Here in this geological wonder the river had sliced a channel through the Columbia basalts, literally turning on edge. From a quiet flowing stream a half mile wide it was suddenly compressed into a chasm measuring less than 200 feet--but hundreds of feet deep. The violence of the current was awe-inspiring.

Through these furious currents the prodigious numbers of salmon on their way to the spawning grounds far upstream were forced to fight their way. Resting from their exertions in the eddies and backwaters they were easy prey for the native fishermen with their nets and spears. They were taken by the thousands, and the Indians traveled for miles to these famous fishing grounds.

The salmon fishery was not, however, the only reason that the Long Narrows of the Columbia developed into one of the richest archaeological regions in the United States. This area, which was the Wishram of Washington Irving's "Astoria", was the gateway between the two distinct geographical regions of the Oregon Country. From the wet, lush West came the coast and lower river tribes with their dried clams, wapato, canoes, sea shells, and baskets to trade with the proud people of the dry plains to the East for slaves, furs, robes, and dried meat. Uncovered in Wakemap and nearby prehistoric sites were pipestone from Minnesota, turquoise from the Southwest, copper from Michigan or Alaska, graphite and galena from Montana, and dentalium from Vancouver Island.

At the Long Narrows, in the summer time, it was a continuous county fair. The distinctive tribes mingled, and traded, and gambled, and absorbed each others culture, leaving behind in their camp sites and burial grounds a wealth of artifacts that, had they been properly excavated and classified, may have unfolded the story of this, one of the most advanced cultures in the United States.

From the vast amount of material uncovered by amateurs we now know that the arts, both aesthetic and mechanical, were highly developed. From the meticulous endeavor of the scientists such as Drs. Warren Caldwell, Douglas Osborne, and L. S. Cressman, we know something of the sequence of events that preceded the rise and sudden decay of the great nations that peopled the Columbia River Valley

and met at the Long Narrows in such numbers. It is from published and unpublished papers of scientists who labored in this romantic region that this short paper is compiled, and it is to them alone that credit is due for what is known.

While this paper is entitled "The Wakemap Report", it necessarily covers the entire area of the Long Narrows, for the Mound and the nearby sites are inseparable. The Mound is but one phase of this region. In a discussion of middens in "American Antiquity" the statement is made, "Where the midden is deep but of limited area, forming mounds 30 feet deep and 300 feet in diameter, the population was small, perhaps 100 people." And at the Long Narrows the natives gathered by the thousands. But the Mound was the only site on the right bank that was stratified, and therefore subject to analysis; nevertheless there is much information in the sites called Atlatl Valley, Maybe, Indian Well, and Congdon, although, unfortunately, none of them were properly excavated. The information contained herein on the latter sites cannot be classified as scientific. Its inclusion here may be deplored by some, but to the lay reader it must contain some interest. These sites are gone, sifted through hundreds of amateur screens, buried beneath highway or railroad fills, or drowned by the waters. The materials obtained from them do serve to emphasize the extent and diversity of the great culture that once existed along the romantic Long Narrows of the Columbia. It is hoped that the reader of this report will look upon the vanished inhabitants as people, and not as savages.

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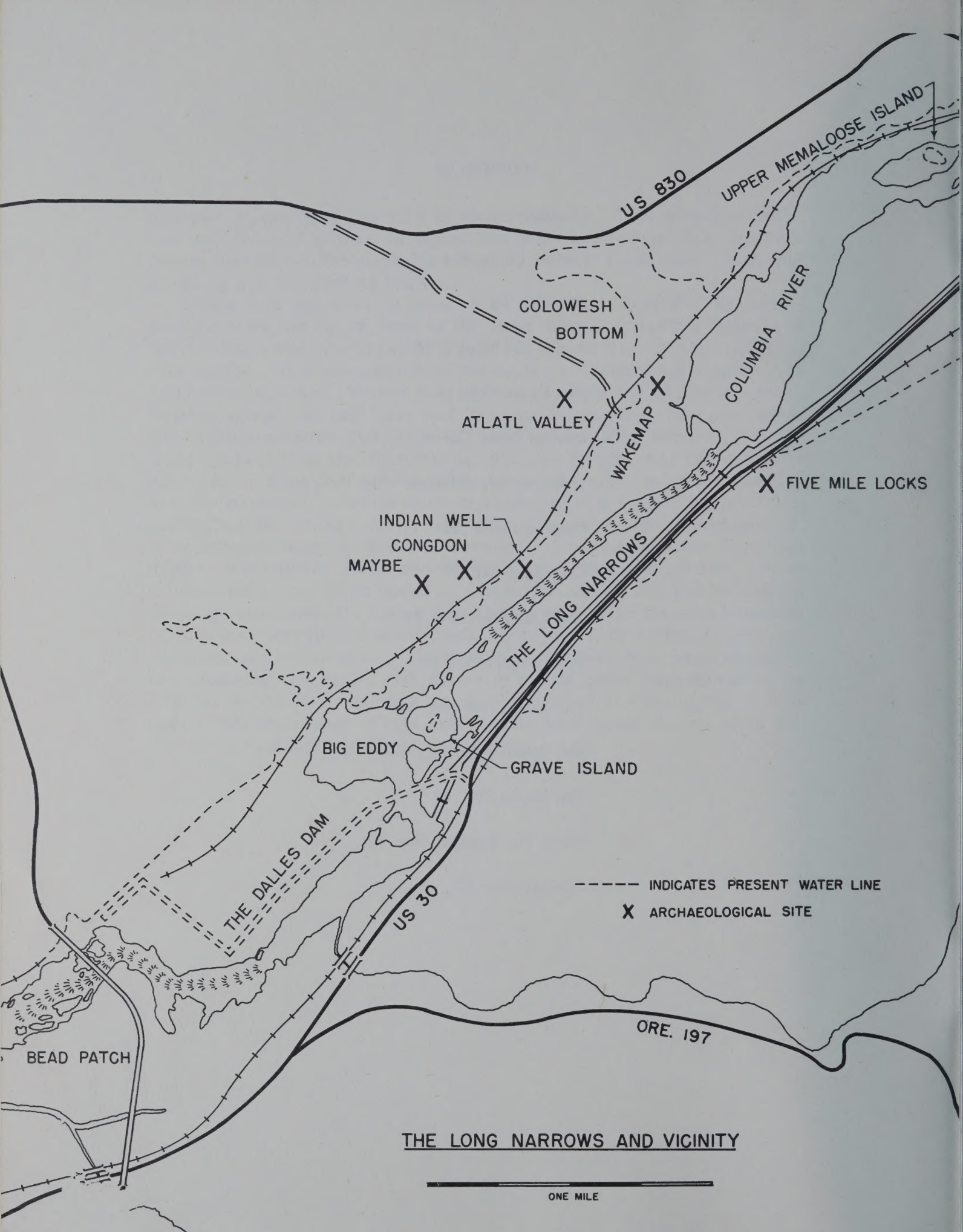

THE LONG NARROWS AND VICINITY

A Sketch of the Long and Short Narrows of the Columbia
Celilo Falls
The Short Narrows and Brown's Island
Upper Memaloose Island
Wishram and Wakemap Mound
The Long Narrows. The dots are stacks of dried fish.
Big Eddy
Grave Island
Site of The Dalles dam
Site of City of The Dalles

CELILO FALLS AND THE LONG NARROWS AS DRAWN BY LT. CLARK

HISTORY OF THE SITE

The first white men to see Wakemap Mound and all the country around the Long Narrows of the Columbia were the members of the Lewis and Clark expedition. On October 24, 1805, Lt. Clark recorded in his journal:

> passed one Lodge below this rock, and halted on the Stard. Side to view a very bad place, the current divided by 2 Islands of rocks the lower of them large and in the midal of the river (Upper Memaloose Island), this place being very bad I sent by land all the men who could not Swim and such articles as was most valuable to us such as papers Guns & ammunition, and proceeded down with the canoes to a village of 20 (21 on map) wood houses in a deep bend to the Stard. Side below which was a rugid black rock about 20 feet hiter than the Common high fluds of the river with Several dry channels which appeared to Choke the river up quite across; this I took to be the 2d. falls or the place the natives above call Timm, the natives of this village received me verry kindly, one of whome envited me into his house, which I found to be large and comodious, and the first wooden houses in which Indians have lived Since we left those in the vicinity of the Illinois. they are scattered permiscuisly on a elivated Situation near a mound of about 30 feet above the Common leavel, which mound has some remains of houses and has every appearance of being artificial.

The Mound was Wakemap, and the village was Wishram, brought to national prominence by Washington Irving in "Astoria". The "rugid black rock" was the basalt outcrop at the head of the Long Narrows. The native name of the village was Nixluidix; the name Wishram is an anglicized form of the name Wu'cxam, by which the tribe was known to the Klickitat and Yakima Indians. The word Wakemap is also an anglicized word, from Wuq'emap, which means ogress or old woman, and rhymes with "Wok-em-up".

After Lewis and Clark there were a great many references to the Long Narrows and the natives encamped there, but none about the strange mound, so foreign in nature to the Columbia. In "Astoria" there is a vivid and somewhat romantic description of Wishram; the data were extracted from the Journals of Franchere, Stuart, and other early Astorians. The widespread appeal of the book made Wishram one of the best known Indian towns in the United States and the Union Pacific Railroad capitalized on the familiar name by changing that of their division point at Celilo Falls, about eight miles above the original Indian village, from Fallbridge to Wishram.

PLATE NO. 2

Site of the Indian village Wishram. Wakemap Mound is in the left center, where the railroad tracks disappear through the rock cut. At right center is the start of the Long Narrows. This picture was taken during the yearly spring flood; during low water all the bedrock on the right is dry. To the left of the curve in the railroad track is Colowesh Bottom; the track disappears into Petroglyph Canyon. The houses are residences and fish drying sheds of the local Indians. In the center distance is Upper Memaloose Island; the Atlatl Valley site is just out of sight on the left. The present water level is about at the large house on the left.

The houses observed by Lewis and Clark were the typical Chinook split plank houses, common along the river from The Dalles to the sea. Lt. Clark describes them:

> those houses are about the Same Shape Sise and form 20 feet Square with one Dore raised 18 inches high & 14 wide, forming in a half circle above, those houses were Sunk into the earth six feet, the roofs of them were Supported by three Strong pieces of Split timber on which, that and the walls, the top of which was just above ground Supported a certain number of Spars which are Covered with the Bark of the white Ceader, or Arber Vitea; and the whole attached and Secured by the fibers of the Cedar. the eaves at or near the earth, the gable ends and Side Walls are Secured with split boards which is Seported on iner Side with Strong pieces of timber under the eves &c. to keep those pieces errect & the earth from without pressing in the boards, Suported by Strong posts at the corners to which those poles were attached to give additional Strength, small openings were left in the roof above the ground, for the purpose, as I conjectured, of deschargeing their arrows at a besiegeing enimey; Light is admited thro' an opening at top which also Serves for the Smoke to pass through, one half of those houses is apropriated for the storeing away Dried and pounded fish which is the principal food, the other part next the dore is the part occupied by the nativs who have beds raised on either side, with a fire place in the center of this Space. each house appeared to be occupied by about three families; that part which is apropriated for fish was crouded with that article and a fiew baskets of burries.

This description will fit in general all the houses on the lower river, but it should be noted that they were occupied at the Long Narrows by the permanent residents only, about 400 in the early 1800's. The large summer population, which numbered in the thousands, lived in simple temporary mat shelters supported by poles. Since the Long Narrows had no attraction other than the excellent fishery, it is likely that there was never a large permanent population there. In the winter the natives moved back to the small rivers and streams where the weather was more moderate and fuel--an article completely lacking at Wishram--and game were available.

Historically, according to Spier and Sapir, the Wishram were

PLATE No. 3

Aerial view of the Long Narrows (opposite page)

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Chinookan and spoke a Chinook dialect, as did the Wasco and other neighboring tribes. Above, the natives were Sahaptin stock. What movements were made prior to the coming of the white man are, of course, unknown. Before 1800 the white man's diseases had already struck the Wishram; they were a broken race when first seen by Lewis and Clark.

Since the historic Indians were not the same culture that left the archaeological heritage, they will be of no further concern to us in this report.

THE SITE

The Columbia is a young stream, geologically speaking, and all its vigor and energy has been none too much to force itself over a tortuous bed. The expansive Columbia Plateau basalt flows have forced its upper reaches into the granite hills far to the North. As the lofty Cascade Mountains rose from the oligocene plains they impeded the stream for ages, forcing it to carve a gorge which today is one of the scenic wonders of the world. But the earth has lain quietly for many ages and the river has eroded a channel which although liberally sprinkled with rapids, still is fairly placid except for the Kettle and Celilo Falls, Rock Island and Priest Rapids, the Long Narrows, and the Cascades (now all, of course, drowned out by dams). Through these violent waters the anadromous salmon, in unbelievable numbers, were forced to fight their way, and it was at these places the prehistoric inhabitants gathered from all the country round about to net and spear this prince of fishes, as they rested in the eddies and backwaters, or streamed close to the rocky gorges to escape the worst currents. All these rapids and falls were famous fishing sites, but the Long Narrows was the best of all. Besides being the longest rapid and consequently affording more places for fishing sites, the salmon were still fairly fresh from the sea. By the time they reached the upper river sites they had consumed much of the rich store of oil they had accumulated for their long journey of several hundred miles to their spawning grounds, from which they never returned. There probably was never a more rich or abundant food on which a primitive nation could nourish itself and develop into one of the highest stone age cultures in North America.

Astride the only water level pass through the Cascades between Alaska and California, the Long Narrows became, besides a famous fishing site, a natural meeting place for the cultures of the forests and sea coast of the west, and the semi-arid plains to the east. The Long Narrows developed into a great trade mart; thousands of natives gathered there to exchange products of the chase and of their domestic art. Evidently warfare was infrequent; they assembled in peace, and the blending of the cultures and the concentrated population enriched the area in both petroglyphic art and in artifacts. While there

were permanent village sites--notably at Wakemap, on the Oregon shore directly opposite, and at the lower end of the rapids opposite Big Eddy--actually the entire area, on both sides of the river, was one big campsite. Artifacts and camp debris were everywhere over a four mile stretch of the river. From this area a great deal of typological material was recovered; Wakemap fulfilled the need of a stratified site for analysis.

Plate 3 shows an aerial view of the Long Narrows and vicinity, during construction of The Dalles dam. Clearly shown is the rugged, broken, barren nature of the area, but the steep hillsides and vertical cliffs are not apparent. This picture was taken during low water; in flood season the river overflows much of the bedrock along the chasm. The picture covers an area about three and a half miles long.

Wakemap Mound is the light colored area directly above the figure 1. Opposite on the Oregon shore at 2 is the Roadcut site where Dr. L. S. Cressman excavated the oldest continuously occupied site in the United States, over 10,000 years. The Atlatl Valley site is at 3, Indian Well at 4, Maybe at 5, and Congdon at 6. The large basin at the left is Big Eddy; Colowesh Bottom is the flat plain on the right. Through the narrow gap where the highway curves, the Columbia once spilled over the high cliff onto the plain, a spill basin of sand and gravel. The concentration of highways, railroads, and the canal along the Long Narrows is evident. A wealth of archaeological material was destroyed during their construction, especially on the Oregon side.

The rocks along both sides of the Long Narrows were lined with fishing stations. Some were natural rock shelves from which salmon could be dipped; most were built of poles and planks, reaching out over the churning waters. Because the river rose as much as 45 feet during flood stage, a number of sites were necessary as the water level fluctuated. Fishing sites were individually owned and passed on to the descendants, but apparently were freely loaned, and those in need were entitled to take as many fish as they wished from the catch thrown on the bank by the fishermen. A ton of fish a day could be netted easily from a good station.

Wakemap Mound covered an area 350 feet long and 270 feet wide, and up to 20 feet deep. Mounds of this nature are practically unknown on the Columbia River. On the opposite or Oregon shore there was a midden of the same structure and artifact content, 11 feet deep, but it like all other middens did not stand out as a mound; wind blown sand had built up the nearby ground at about the same rate.

The Mound probably got its start as a campsite of simple brush or mat lodges sheltered by a rock outcrop. As the refuse accumulated and became unbearable to the inhabitants, soil may have been carried in to cover it; as the deposit deepened pit houses were probably constructed. The soil used for the roofs would have further deepened the midden as the houses grew old and collapsed, or were

destroyed by the ever-present menace of fire. Occasionally floods left layers of silt, and wind blown sand assisted in the accumulation.

The first inhabitants were few in number. They were hunters, fishermen, and gatherers of seeds and roots. Their possessions were meager, and living conditions primitive. As the population increased the artifacts became more plentiful and complex; small chipped points were made, and bone harpoons. Antler was used for fashioning implements and ornaments, and bone or antler dice, used for gambling, were plentiful.

Near the top of the deposit the artifacts increased in variety, and the sudden appearance of massive stone objects indicated outside influence. Bone and antler are not found as the top is reached, and art work dies out; modern Indians do not even remember art in stone. It is now a time of decline and the population is falling off; only a few artifacts gain in importance. "Mule ear" knives and "dagger" points are recent as are artifacts of clay, and trade goods are found only at the surface. The record is almost complete as the Mound is deserted. But the decay of the Mound does not mean abandonment of the area. The population has increased greatly; there are new villages and many campsites, but the Mound is no longer used as a home site.

There is a close similarity in all the deposit. It is thought that one people lived there throughout, modifying their ways occasionally to meet new challenges but never being uprooted by violence or displaced. The few changes, such as the appearance of nipple topped mauls and the cessation of bone and antler carving, may represent the adoption of new patterns or the influx of new peoples.

AGE OF THE MOUND

The age of Wakemap is still a controversial subject. Dates obtained by the carbon-14 method show an age of only about 1000 years, a figure not generally accepted because of controversial evidence. Since the Mound was deserted in 1805, an earlier terminal date is inferred; it seems inconceivable that a midden the size of Wakemap could be built up in only 800 years. Geological evidence predicted a date of about 2000 years. The art producing culture has been estimated to have originated about 1200 to 1500 years ago, and specimens of both massive stone and delicate bone carvings were found deep in the deposit. These could have been lost several centuries after the deposit started, if pit houses are accepted as the usual habitation. They also may have been lost much earlier, but if the 1200-1500 year date of the art is accepted, the Mound cannot be much older than about 2000 years, and also must be at least that old. In this paper Wakemap Mound must be listed as "age unknown".

PLATE NO. 4

Members of the Oregon Archaeological Society excavating in Wakemap Mound.

THE EXCAVATION

By agreement with the University of Washington, holder of a contract with the National Park Service for excavations in The Dalles reservoir, the Oregon Archaeological Society was permitted to excavate, under supervision, in Wakemap Mound. The site was laid out in a grid of five foot squares which were taken down in one foot levels. All material was screened into wheelbarrows and removed from the site. The artifacts uncovered by Society members are to be held in trust by the finder, and to be available at any time for study or exhibit purposes. Members are not permitted to sell specimens, or to dispose of them without permission.

Excavation was to bedrock, when time permitted, and each member was required to complete a square before starting another. The sides of the excavation were kept smooth and straight so the features and stratification could be seen and photographed or sketched. Most of the amateur digging was done after the scientific work by the University of Washington was completed.

GROUND STONE

Mortars with thin sides and mauls were found from the lower middle portion to the top of the Mound. This rather sudden appearance has been interpreted as the result of outside influence. However, there was some ground stone in the lower levels; one especially fine stone mountain sheep head was uncovered by Dr. Caldwell's crew near bedrock.

There were many large mortars found, although nearly all were in fragments or had the bottom broken out. In the lower levels they were generally flat basalt slabs with a small pecked depression. Those nearer the top were larger and deeper, generally undecorated, although occasionally one was embellished with geometric designs, and two or three had stylized owl or human faces. One decorated mortar 24" long was found. It probably represents a beaver. The tail is broad and flat and incised with parallel lines. The exposed rib motif is evident, and the legs and feet are shown. This was the most elaborate large stone bowl found in the Mound.

The small mortars, commonly called paint pots, were usually highly decorated and well formed. These ground stone objects reflect consistently the artistic impulses of the primitive occupants. One especially fine piece is shown in Plate 9, second from the bottom. The small mortars appear to be ceremonial and symbolic, while the large ones are purely utilitarian.

Pestles were found in considerable numbers. Since stone pestles were used with wooden bowls, they normally would be more plentiful than the stone mortars. In general they were short and undecorated; nearly all were battered from use and many were broken. Dr. Caldwell uncovered 102 specimens of mauls and pestles; many more were excavated by amateur diggers. Besides chipped pieces, pestles were the most common artifacts in the Mound.

Mauls were not plentiful. A maul differs from a pestle in that it has a flaring base; they were used for driving wedges in splitting wood for fuel or planks. One is shown in Plate 12. They should never be confused with pestles used for food preparation. The maul was normally swung endways, striking with the butt. A conveniently shaped natural stone was frequently used for driving. Mauls are generally well made and quite frequently decorated, especially the top of the handle.

None of the familiar long Columbia River tube pipes were found in the Mound. Instead, they were short and funnel shaped, varying from one-half inch to four inches long. In Plate 14 is shown a group of pipes from Wakemap and from burial or cremation sites in the area. Pipes of the type that came from the Mound are also found in other sites on the Long Narrows.

The so-called atlatl weights were uncovered in Wakemap; one is shown in Plate 18. With it was the zoomorphic carving and the small tube pipe. One specimen of the long slender type, notched on the ends, was reported. It is interesting to speculate whether the weights were actually made and used by the occupants, or were found and carried home merely as a curiosity. It is known that odd shaped and colorful stones were hoarded as, possibly, totems, or merely in appreciation of beauty of form and color. The cache of the weight, carving, and pipe shows that the owner considered the weight as one of his treasures.

Without qualification it can be said that ground stone from Wakemap in no way differs from that found in the Columbia Plateau. There were no pieces that could not be duplicated from other sites, nor any found elsewhere that were not also found in the Mound. Elaborate art objects, highly valued by the owners and therefore not easily lost, were rare in Wakemap because it was not a burial site where such objects were placed with the deceased. Wakemap Mound was a living site. The objects found there were a true cross section of the implements used in their normal everyday life.

PLATE NO. 5

Stratification in Wakemap Mound.

WOOD, ANTLER, AND BONE

From whatever direction the peoples of Wakemap came, they must have been woodworkers at the time of their arrival. Utilitarian pieces are found in the deepest parts, and the house of cedar planks discovered by the University of Washington must have been early. Cedar does not now grow at The Dalles and the planks or logs would have had to be floated in, which implies a developed trade or transportation facility at an early date.

Articles of wood are like fossils, for each piece represents thousands of others that have decayed away. Wooden artifacts were not plentiful, a few hafts for stone knives, cedar skewers, an occasional arrow head or harpoon part in an advanced state of decay. All were found deep and may indicate that wood was used for these objects more at the early times, or just that they were better preserved by the depth. One of these pieces came from bedrock and is fashioned from a hardwood limb. It is four inches in length and tapers to a rounded point from an indented base. The lower side has been sharpened by grinding, kitchen knife fashion, into an effective scaler or knife. The wood is polished from use and marks made by the stone knife in manufacturing are discernable along the blade.

Antler was used for many purposes. There was little distinction in the mind of the maker between this material and bone and artifacts found of one are usually also made of the other, although antler was preferred for delicate carvings since it provided more bulk. Probably an even higher percentage of artifacts were of antler than the record shows since of the two it is less apt to survive.

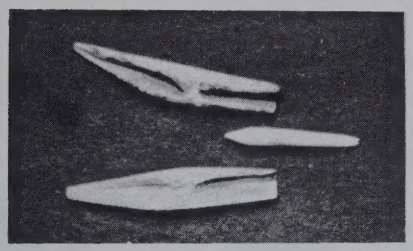
The horn wedges and other evidence of wood working were concentrated in the lower levels. There were both large and small types although some of the smaller ones were fashioned of bone. Antler tines were used as flakers, and a section of elk antler hafted to a scraping tool was reported by Dr. Caldwell. Also, the burnished tips of elk and deer horns were favored in the making of harpoon tips and bone arrow points.

One of the unusual features at Wakemap was the rich bone tradition in the middle and lower levels. Some of the pieces show painstaking workmanship and excellent symmetry, and are stained a glossy dark mahogany from use and contact with the soil. Occasionally one was decorated with incised geometric or naturalistic designs, but most were purely utilitarian.

Gaming pieces of bone were fairly common in the lower levels. They were rectangular or ovoid in shape and were decorated with circle and dot or geometric designs. They were used in various gambling games.

Most numerous of bone artifacts were awls. They were splinter, cannon bone, and "L" shaped types and varied a great deal in length and form. Bones of deer and elk were favored; occasionally a bird bone was used.

Harpoons were early in the Mound and were an important feature. There were several types, the most common being a complex point manufactured from three pieces of bone or antler. The piercing portion was a short bi-point that fitted snugly into paired barbs made from a split, hollowed cylinder of bone or antler. The cord that bound the point together was looped free and fastened at the other end to the shaft. When a fish was struck the composite point was freed, and the fish played himself out against the line.

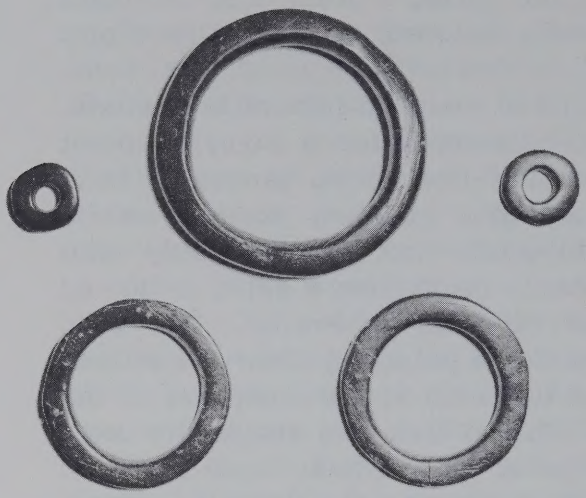


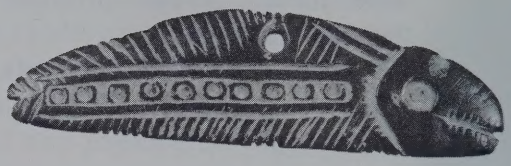
Simple harpoons were rare but were found in the lower levels of the deposit. They were usually flattened pieces of bone or antler with opposed or alternate-opposed barbs. Bases were smoothed and tapered, some showing a basal swelling. No perforated types were reported.

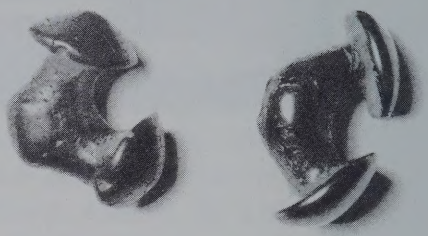
CHIPPED STONE

As in other sites near The Dalles, choppers and large scrapers from Wakemap were not distinctive. Large, scallop edge scrapers were found in limited quantity; one discovered by the University of Washington was hafted to an elk antler and was used as a scraping implement. These stones are ovoid and the edges are flaked part way or entirely around, being chipped from one side only so that jagged, scalloped edges are characteristic. It is difficult to see how most of them could have been primarily used as scrapers and a shredding purpose seems more likely.

The flake tool tradition was well developed. Lamellar spalls, burins (rare), basalt flake knives, and spall celts were most plentiful in the middle and bottom levels, while discoidal pebble knives and random flake scrapers and knives were found throughout. As in other sites the most common scraper was formed from a flake, often rectangular or triangular in outline, and the bulb of percussion was keeled to form the cutting edge. Flake knives vary a great deal in form but share retouched edges and general evidence of hard usage.







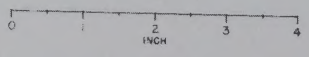


PLATE NO. 6

STONE SCULPTURE. Upper left, steatite rings from the Congdon site, the largest is 3-1/2 inches in diameter. Left below, amulet from the Congdon site, 2-3/4 inches wide. Second from bottom, small stone carving from the Bead Patch. Bottom, stone object from the Maybe site. Upper right, steatite fish ornament from Wakemap Mound. Bottom right, beads made from hard coal, Congdon site.

Gravers include beaked types and those with drill-like form. Some show wear and many were broken in use. Even with gravers and burins it is difficult to understand how the people could have created the many fine bone and antler carvings that are characteristic of the site.

Flake tools are basic in the area as reported by Dr. Cressman and others at Five Mile Locks and they provide the foundation for the superb stone working tradition of the middle Columbia. They are as apt to be of colorful agate as of dull material and many show careful retouch and pleasing symmetry.

Drills are fairly consistent as to form but show variety as to function and technique. Some have long, tapering shafts and are worked to a needle point while others are stubby and have blunt points. Most of those found had a relatively long, straight pile that expanded to form a rounded or flattened base. They were found from top to bottom but they appear to be more plentiful in the mid to upper levels. A few bi-point drills were found, and another common form was the side or corner notched type exactly like a projectile point except that the blade tapers rapidly at the end to form the drill tip.

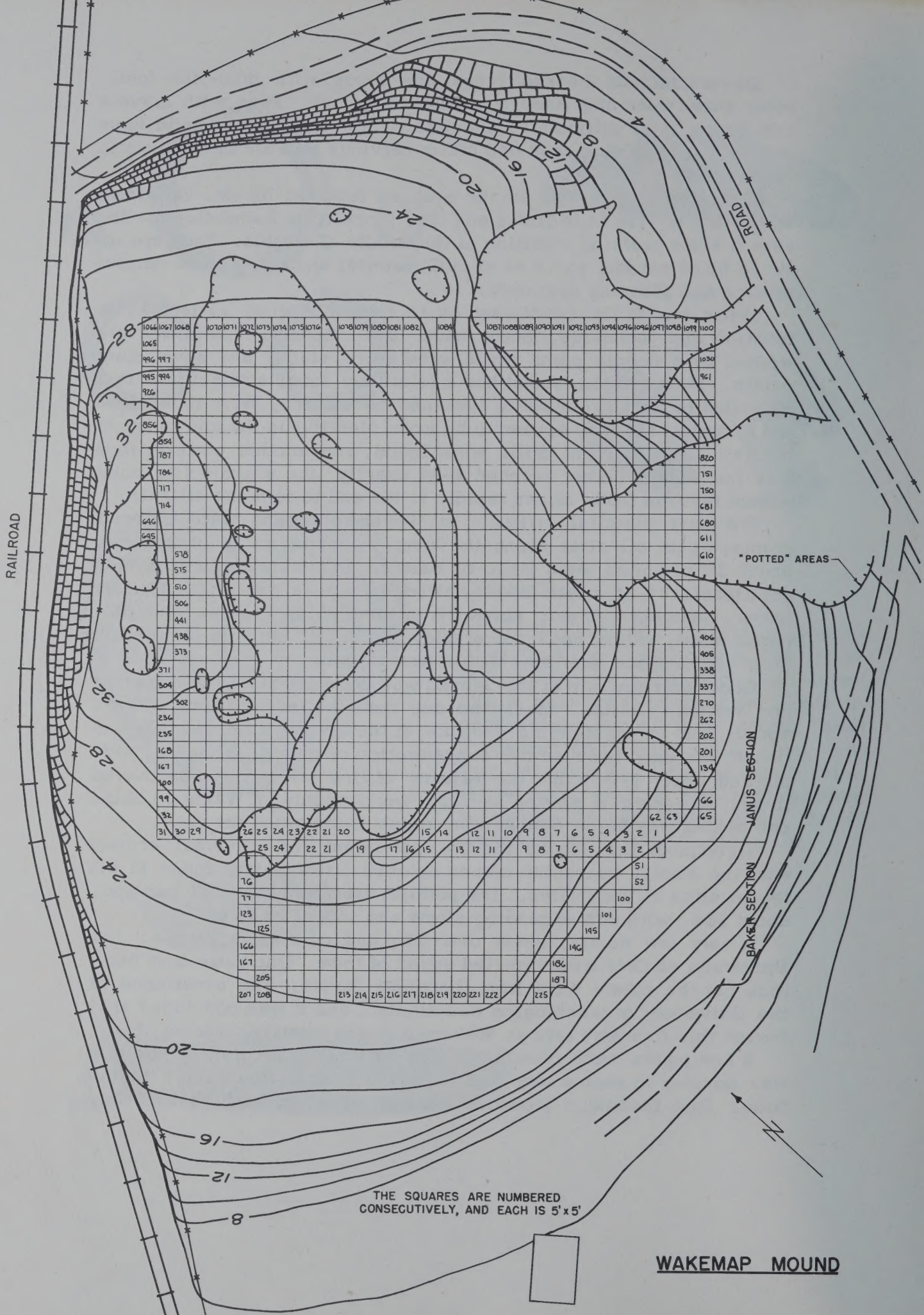
The most plentiful artifacts in Wakemap Mound were chipped points, as in all sites along the river. Despite its tough texture, about 2% of points were made of basalt. Obsidian accounts for an additional 10% of small pieces, although it was never preferred for larger, unnotched forms. About 5% of total chipped stone was petrified wood, which does not display the finest chipping since the grain of the stone interferes with a neat fracture.

Good workmanship at the Mound was not a product of one area or one vertical stratum. Most who dug there believe that one was as apt to find an outstanding example at the bottom as at the top and that it was only because the concentration of points was in the middle and upper levels that the majority of fine pieces was uncovered there. In general it may be said that workmanship on Wakemap chipped pieces was below that in other recent sites along the river.

Throughout the Mound the one persistent and universal artifact was the small, triangular corner notched arrow point, found in all recent sites at The Dalles. The parallel stem was the most common, about 55%, with 30% expanding stems and 15% other forms.

A very few points, never over 5%, had contracting stems. The University of California reported seven of them. One came from bedrock but the others were from the upper levels. The experience of the University of Washington was similar, and it was concluded that though this form was rare at Wakemap it was relatively recent there.

A few points were basally notched, that is, the original triangle was notched in such a way that the entire indentation occurs in the base. This technique produces a long, sweeping barb as long as,


RAILROAD
ROAD
"POTTED" AREAS
JANUS SECTION
BAKER SECTION
THE SQUARES ARE NUMBERED CONSECUTIVELY, AND EACH IS 5' x 5'
WAKEMAP MOUND

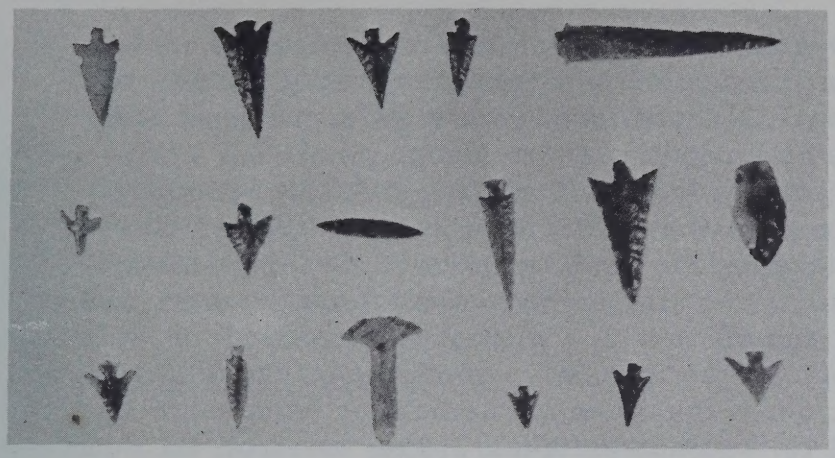
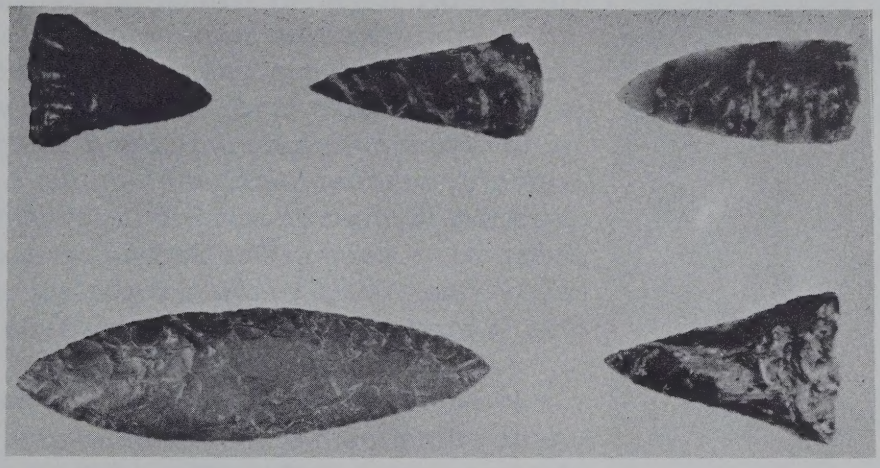


PLATE NO. 7

Arrow points and knives from Wakemap Mound.

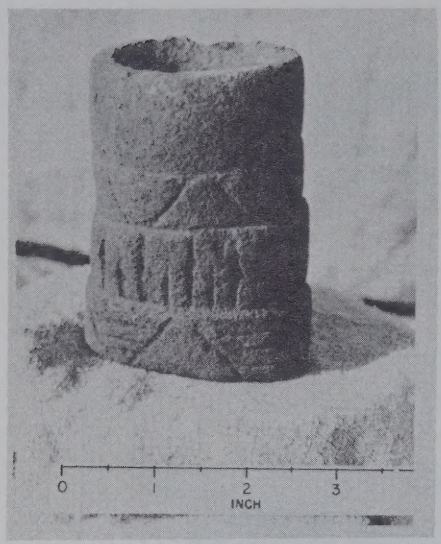


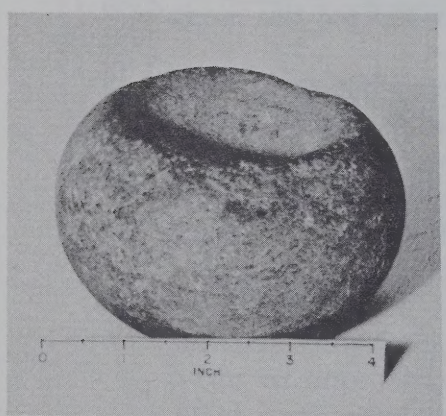
and sometimes longer, than the stem itself. Since this is a difficult technique one seldom finds such a point that does not reveal the most delicate workmanship and the finest control.

Non-barbed points usually have square shoulders, but on poorly made examples the shoulders are rounded and often slope forward toward the tip of the point.

The so-called "dagger" point has a narrow blade and a stem that grades from almost circular to a diamond shape. About half of them have an acutely flaring shoulder that produces a spur or lateral barb. They are always well made and often from the finest material. They account for a small percentage of total points found, and were limited to the upper levels. This type of points is frequently found in cremations, and was most plentiful on the Oregon side near Five Mile Locks.

Another rare type of point that was limited to the upper levels was a small, delicately flaked side-notched triangle with tiny, opposing side notches. A further refinement on some specimens was a basal notch, producing what some called a "mule ear" point. These were frequently made of obsidian.





The leaf shaped point was not plentiful and at Wakemap represented a continuation of a very old tradition. Of those found, some were small and some revealed the poorest workmanship.

Unnotched triangular blades from the Mound fall into two variations. The smaller type, called "Wakemap Triangles" by the University of Washington team, were found from top to bottom but were concentrated in the middle levels. Workmanship varied on this form but it was generally poor, many being plano-convex and some showing the bulb of percussion unaltered by secondary flaking. They average an inch in length.

Slightly earlier and much larger were the "McNary Triangles". The largest were an inch and a half wide and three inches long. Some were well made although most were not; occasionally one was found that was made by percussion flaking only. A blue to gray chert was the favored material but petrified wood and agate were also used. The form of both of those described above was that of an isosceles triangle, the base being rarely more than one half inch in width.

Another large type of chipped artifact was the "Plateau Pentagonal". These were shorter than the large triangles but they were also wider. The general outline was a rectangular basal area graduating into a triangular point. Pentagonals with concave bases were limited to the upper levels while those with straight to convex bases were concentrated in the lower levels. The use of the triangles and pentagonals is not clear; it is probable that they were knives. The few that were found with the hafts still attached showed that the point and not the base was the working end. "Mule Ear" points are possibly a development of the pentagonal although there is no evidence to show that the function was the same. They have the same basic blade outline but the base is deeply concave or contains a deep "V" notch, often asymmetrical

PLATE NO. 8

Small stone mortars from Wakemap Mound.

as far as the center of the point is concerned. Many of these appear to have been resharpened, and it is this feature that leads most observers to regard them as blades for use as hafted knives. Some have been resharpened until the blade has almost disappeared. This type point was limited to the top and top middle layers and were probably late in arriving. Again, chert was the most used material.

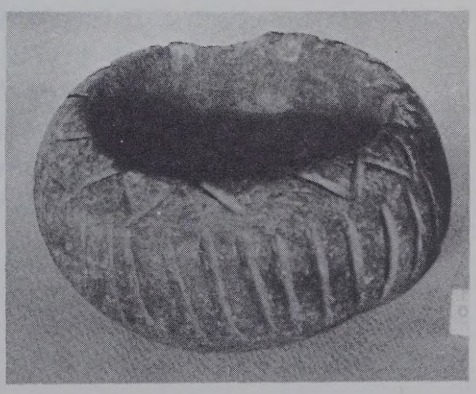
OBJECTS OF ART

All primitive people enjoy aesthetic art. The term "primitive" is relative only, and is dependent on the state of culture of the individual. What looks primitive to us may have had an elaborate and definite meaning to the culture which produced it, one about which we have no knowledge or understanding and therefore can not appreciate the art. As the state of the culture increases, the feeling for expression also increases and more elaborate portrayal is necessary to satisfy it. The objects of art found along the Columbia attest to a high degree of culture, probably as high as any north of Mexico.

The medium used for the expression also has a bearing on the quality for the harder it is to work the more intense must be the desire. That used along the Columbia was one of the most difficult--dense lava and sometimes granite, quartzite, and other hard stone. Bone and antler when green are also difficult to handle, and the precision with which they were carved show considerable mechanical aptitude.

Most of the stone sculpture of the Columbia River is found in the vicinity of the Long Narrows, from the John Day River to Crates Point. The art takes two forms: the execution and embellishment of utilitarian objects, especially bowls and pestles, to a degree of perfection far beyond that required for good workmanship; and purely non-utilitarian sculptured articles, executed for aesthetic pleasure only. The properties

PLATE NO. 9



STONE MORTARS. Top, from Five Mile Locks. Next below, Congdon site. Second from bottom, owl effigy mortar from Wakemap Mound. Bottom, mortar with geometric pattern, Wakemap Mound.

of some of these pieces, especially when considered with the care and workmanship expended on everyday tools such as arrow points, bone awls, and knives, evince the advanced state of the culture. Archaeological investigations indicate that this rich art-producing culture originated about 1200 to 1500 years ago and reached its apex 800 to 1000 years later.

The art style developed along the Columbia River has some definite characteristics, of these the most significant is the exposed skeleton motif. Nearly all zoomorphic and anthropomorphic art objects show stylized ribs and, quite frequently, the vertebrae. In some it is the most dominant characteristic; in others it is vestigial. Other motifs are the crescent mouth or "grinning face", elaborate hair and ear ornamentation, and bulging eyes with prominent orbital ridges. These features are found in primitive art in many areas but their combination, with the general massiveness of form, serves to immediately identify them with the Columbia.

The style forms found in the three dimensional specimens is also apparent in the pictographs and petroglyphs that once were so plentiful on the smooth basalt cliffs bordering the river. One of the best of the petroglyphs is still undamaged, overlooking the old village site of Wishram, but most of them are now deep beneath the waters of Lake Celilo behind The Dalles Dam. There were literally hundreds of them, and they varied greatly in technique and expression. The mountain sheep was the animal most often depicted, probably from a desire to achieve success in the hunt, or as a fetish to increase the numbers of that desirable game. The stylized owl was the most dramatic of the zoomorphic forms, a type called the "Spedis Owl" seems to be found only between the John Day River and the Cascades. The better petroglyphs and pictographs from The Dalles area show remarkable skill in handling a difficult medium, and a strong feeling for line and form.

As might be expected, few objects of art are found in the camp sites as they were valuable and not easily lost. It is from graves and cremations, especially the latter, that the finest specimens are taken. Sculptured articles found in Wakemap were limited to utilitarian objects, with some notable exceptions. The most common decorated objects were mortars and mauls; one of the former is shown in Plate 9, second from the bottom. This is a paint mortar, seven inches tall, of lava. It was once colored deep red; traces of the ochre still remain. The figure is a stylized owl, with sweeping wings and protruding ribs; the circular indentations probably represent the backbone, in the characteristic exposed skeleton motif of the Columbia River art style. The sweeping wings and complete lack of realism emphasize the form. It is unlikely that this object was lost; it may have been in a semi-subterranean house that collapsed, or hidden by the owner who never returned to claim his prize.

The owl shown in Plate 10, top left, is probably the best spec-

imen of art yet found along the river. It is made of hard, fine grained rock, highly polished. The Stone Age artist has succeeded admirably in capturing the vitality and dignity of the owl in this masterpiece. The small bowl appears to be symbolic only; this object should be classed as true aesthetic art. The eyes and mouth are indented instead of bulging in the usual style; it is thought that they were once inset with stone or shell. It was found in a cremation at the upper end of the Long Narrows, at Five Mile Locks.

One of the larger stone sculptures, depicting the massive style of the Columbia River is shown in Plate 1 , top. This object is a ceremonial bowl, and the animal probably represents a beaver because of the broad flat tail. It is of lava and 18 inches long. The geometric design is executed with mechanical precision, and the stylistic portrayal of the animal is admirably handled. Bas-relief sculpture such as this is rare on the Columbia. This one was found in the Leachman cremation site.

The sculptured head in Plate 10, upper right, is the broken end from a pestle or maul. It was found in the same cremation containing the owl on the left. Again the stylistic motif is superbly executed.

In Plate 11, right center, is shown an unusual carving. A figure holding a bowl is common on the Fraser River, and indeed throughout the world, but rare on the Columbia. This one is of lava, nearly 13 inches high, outlined with red ochre. In its left hand it grasps a small anthropomorphic figure. It has been suggested that it represents a woman and child with a carrying basket. It came from the Five Mile Lock site.

Directly below it is a small bird effigy, from a cremation at Five Mile Locks. It is of spotted porphyry, about two inches high. Even these small pieces seem to have mass, and give a feeling of breadth and depth.

The objects shown in Plates 10 and 11 serve admirably to show the extreme range and diversity of artistic development in The Dalles area. In no other place along the river is this diversity apparent.

Plate 12 shows some ground stone objects from Wakemap Mound illustrating both utilitarian and aesthetic art. The hand maul, upper left, came from square 112, at a depth of seven feet. The handle decoration is quite common, although the treatment of the eyes, with the prominent orbital ridges, is unusual in handled implements. Below it is an effigy club head, apparently made from the broken end of a pestle or maul. It was found while bulldozing away tailings from the top of the Mound.

The highly polished stone carving in the upper right was found deep in the Mound. Here the emphasis is on form, with very little realism. It is of lava, about 12 inches long. Below it are two arrow shaft straighteners. These were apparently heated and oiled, and applied to the shaft to straighten or harden it. Arrow shaft smoothers were made of sandstone and used in pairs. Each had a semi-circular

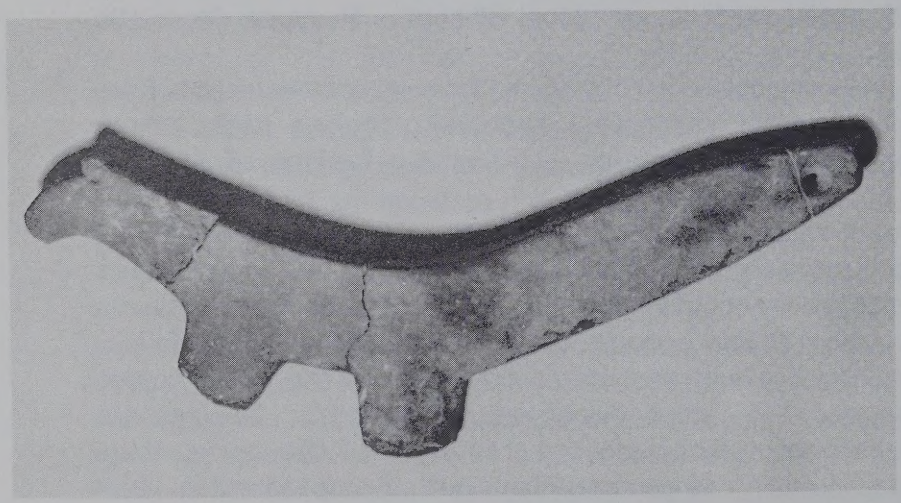


PLATE NO. 10.

STONE SCULPTURE. Upper left, owl mortar and upper right, zoomorphic top of pestle or maul, both from Five Mile Locks. Left, "Slave Killer" club, Leachman Site. Right, maul with carved handle, Maryhill Museum.

PLATE NO. 11.

STONE SCULPTURE. Top, mortars from Atlatl Valley. Right center, unusual figure from Five Mile Locks, 12 3/4 inches high. Lower right, small bird carving, Five Mile Locks. Lower left, effigy from Celilo Falls.

groove which, when the halves were pressed together, did not form a full circle. Thus, pressure could be brought to bear on the shaft when used.

Small, elaborately carved amulets of both bone and stone are found in the vicinity of the Long Narrows but are quite rare both above and below. The stone used was generally one of the soapstones such as steatite; it is easily worked and takes a high polish. Precision carving of hard material on these small pieces would have been very difficult. The skill and imagination of the artist was utilized to the full extent on these small objects, as shown by the specimens in Plate 6. Stone rings were found in the Maybe, Indian Well, and Congdon sites. They are rare in other places on the river. Marks on some show that they were worn suspended on a thong; on others there are no marks. Their great range in size would have precluded their use as bracelets or finger rings.

The steatite fish amulet, upper right, was found deep in the Mound. The ribs are shown, and the circles probably represent the vertebrae. Below it are beads made from hard coal, from the Congdon site. Several beads made of coal were found along the Long Narrows, nearly all of them elaborately carved.

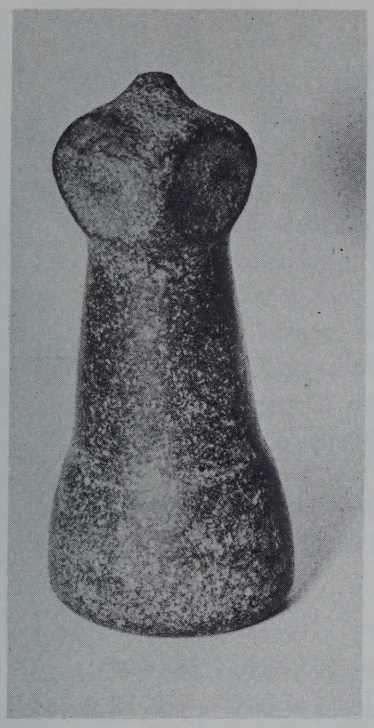
The small amulet with the pensive face came from the Congdon site; the effigy below from the Bead Patch site. The object on the lower left is a type that has been found in several places. All are carved in the same style, but in different forms. Their use or significance is unknown.

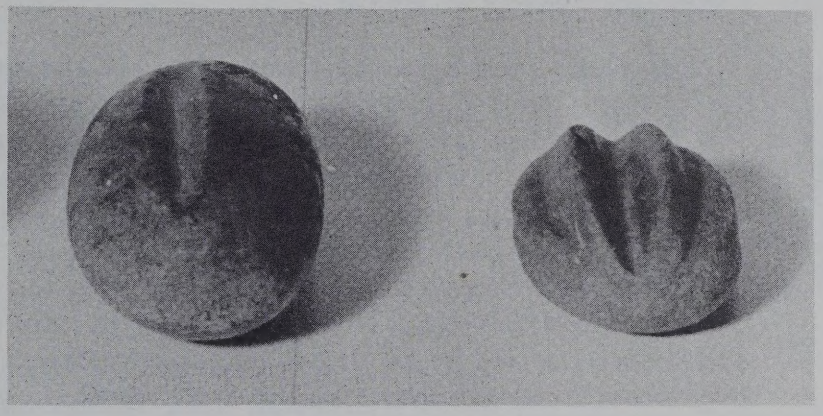
THE LEACHMAN SITE

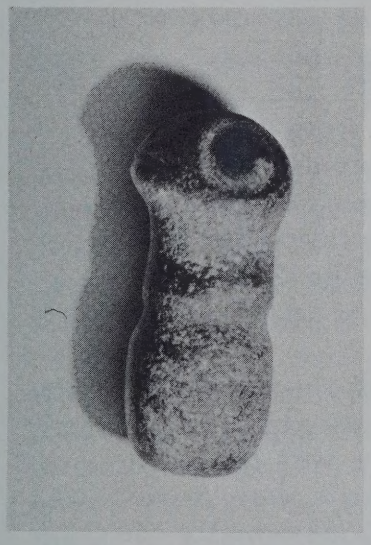
Colowesh Bottom, a fairly flat sand and gravel plain directly behind Wakemap Mound was extensively used as a burial, cremation, and vault burial site. Most of these places were excavated long ago for the artifacts they contained, but recently an undisturbed cremation pit was found near the center of the plain and was excavated.

The pit was completely prehistoric and about 18 feet in diameter, and five and a half feet deep. The top two feet or so was blow sand; beneath it was a layer of sand, ashes, and calcined bone. The bottom layer consisted of ashes, burned bone, and sand. From it were taken a number of fine stone carvings, two "slave killers", about 20 pipes, two complete whalebone clubs, a large number of chipped artifacts, and several bone and antler carvings. Of special interest were the bone and antler figurines, of intricate and elaborate workmanship. These pieces seem to be found only in cremations and are almost always badly burned and shattered.

The pipes were highly carved; five of them are shown at the top of Plate 14. The one on the right has two human figures superimposed on the stem, holding hands in the "brothers" motif common in petro-







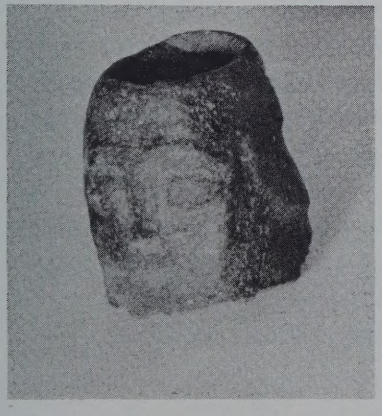


PLATE No. 12

Ground stone, Wakemap Mound. Right, lava, 12 inches long, square 689, 6 foot depth. Left, top, basalt maul, square 112, depth 7 feet. Center, basalt club head (?) found behind bulldozer. Bottom, basalt mortar, 2 3/4 inches wide and high. Opposite the human head is a bird effigy, found in bulldozer tailings. Right, bottom, arrow shaft straighteners.

glyphs and pictographs on the Columbia in the Vantage area. To its left is a remarkable specimen that is reminiscent of the style of the mortar in Plate 8, second from the top. There is an elaborate design on the bowl but the specimen was so badly burned in the cremation it cannot be delineated. The pipe second from the left has a stylized bird that is almost an exact copy of one of the petroglyphs along the Long Narrows. At the left is the common form of the Columbia River tube pipe.

Plate 16 shows, on the left, some of the delicate bone or antler carvings found in the Leachman site. All have been warped and discolored by the heat. Note the exposed ribs and characteristic eye treatment. Evident, also, is the hair style fashionable at the time they were carved.

THE CONGDON SITE

Some distance from the river, at about the center of the Long Narrows, there was a long low mound that was a very ancient village site upon which were superimposed burials and a large prehistoric cremation pit. It was called the Congdon site after the first person to work there. Its distance from the river led observers to believe that it was occupied before the deep chasm of the Long Narrows was cut, and the water ran in a swift rapid over the nearby bedrock.

The cremation was especially rich in stone beads and amulets, and in the burials were found atlatl weights. There were two types of graves: a recent mass burial with remains superimposed and with no particular orientation, and very old burials from which all skeletal material had disappeared. It is from the latter that the better artifacts and atlatl weights were recovered. Local Indians stated that the recent burials were of strangers who were the victims of an epidemic. There were no flattened skulls in this group.

The stone beads from the cremation and those from the older burials came in many sizes and shapes; most of them were quite large. Several made of coal were recovered. One stone type was about one quarter inch square and up to four inches long. The hole was drilled from each end before the stone was dressed down. Occasionally the hole, not being drilled straight, was uncovered in the finishing process.

In general the arrow points from the burials were large and ill formed, and knives were plentiful. From the camp midden the points were especially crude, although in the deeper parts some delicate willow leaf patterns were found, resembling those from the sand layer beneath the Indian Well site, and from the lower levels of the Five Mile Lock site.

Since the burials were very old, the camp midden must have been much older as the Columbia River Indians did not inter in their village sites as did some Willamette River tribes. The midden was up to 10 feet deep. It is thought that this site was one of the oldest on the

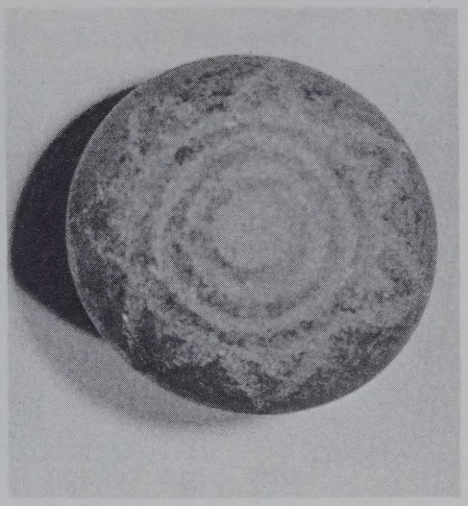
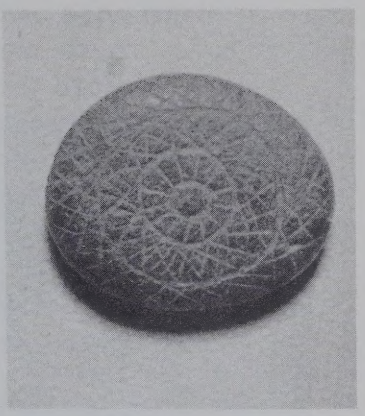


PLATE NO. 13

Carved stones from Wakemap Mound. The one on the upper right is 15 1/2 inches in circumference, found three feet deep below bulldozed surface. The others average 1 1/2 inches in diameter.



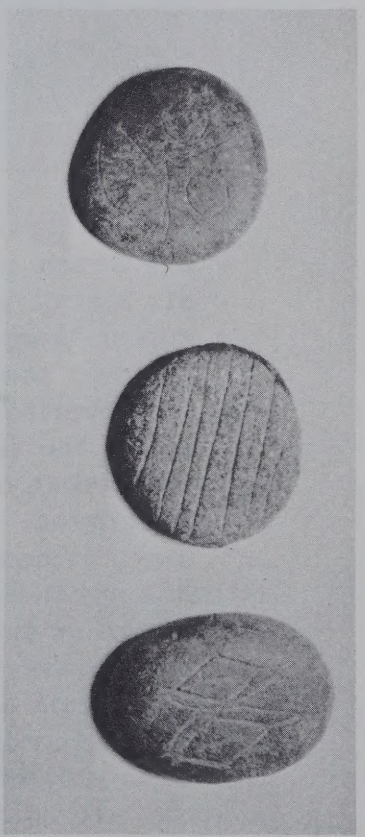
Long Narrows, and certainly many centuries more ancient than the Wakemap Mound. The new railroad grade, built around The Dalles dam, was put through the center of the site, and there was not time to do any scientific digging there.

THE INDIAN WELL SITE

On a talus slope bordering the Long Narrows was found, shortly before The Dalles Dam was completed, one of the most interesting sites on the river. Like the Congdon site, it was hurriedly excavated, and the waters of Lake Celilo covered it before digging was completed.

Indian Well was a very old burial ground from which all but the slightest traces of remains had long ago disappeared. Movements of the steep slope, erosion, and falling rock from the cliff above had so disturbed and mixed the site that there was neither stratification nor segregation and artifacts appeared throughout the deposit about evenly distributed.

The most interesting feature of Indian Well was the quantity of small stone beads found there. The area was saturated with them; some diggers recovered 60,000 of them. These small disc beads averaged 14 to the inch when strung, and varied from one eighth to one quarter inch in diameter; very few were larger. Each screen full of the deposit would have from half a dozen to 50 or more,



and the workers sacked up the residue in the screen for sorting out the beads at home during the long winter evenings. Mixed with the beads were quantities of red ochre in small pieces, about the size of a grain of rice or smaller. Some of the beads were painted red, and several were found stuck together side by side, indicating that they were once strung on a cord. This type of small bead was also found in quantity in the site called the Bead Patch, just downstream from The Dalles bridge, but in the latter there were large beads also. They are not found in significant quantities anywhere else on the Columbia River.

The few arrow points that were found were extremely crude, and generally barbless; knives were practically non-existent. Pipes were the large "cloud blower" tube type, made of coarse stone. One nostril pipe, with two holes in the stem for drawing smoke directly into the nose, was uncovered.

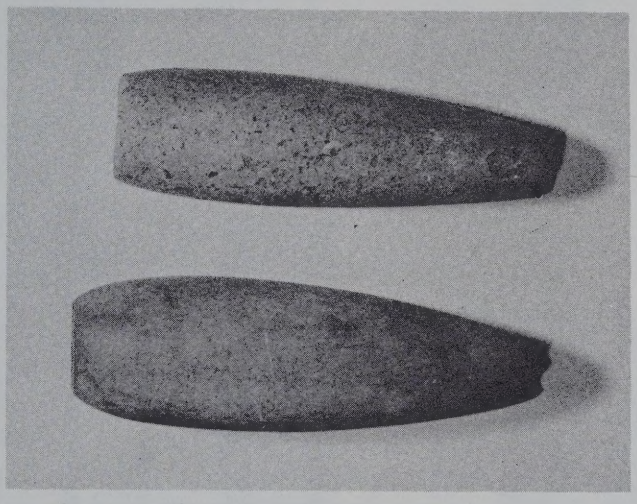
There were a number of large and small stone rings such as illustrated in Plate 6; these and the small beads constituted the bulk of the recovery. There were very few stone mortars or pestles, or carved stone art pieces.

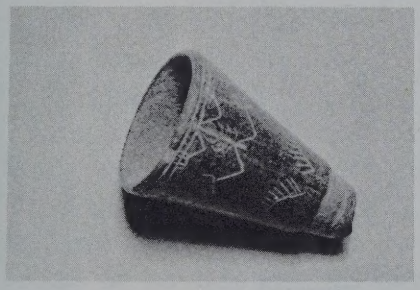
At the lower end of the talus slope, about eight feet deep, an old river beach of yellow sand was uncovered. Once it had evidently been a village site, and the water had washed much of it away, leaving the artifacts concentrated. Here were found delicate, beautifully made willow leaf points, similar to those found in the lower levels of the older sites on the river. Preliminary investigations indicate that this deposit could be as much as 7000 years old. There was no similarity whatever between the artifacts in the sand deposit and the talus slope above. Rising waters prevented any intensive investigations of the lower deposit.

THE ATLATL VALLEY SITE

Just west of Wakemap Mound, about one eighth mile, there is a low bench beneath a high vertical basalt cliff. There is from two to six feet of water laid silt over the bedrock in the flat, and about the center there was an old burial ground, about 150 feet in diameter, that was the richest in artifacts of any place along the Columbia.

Covering the area was a layer of hand placed basalt boulders and slabs; the silt beneath was relatively free of stones. Evidently they were taken out while excavating and used to form a stone mound over the graves. The burials were in roughly two layers. Beneath the cap rock, seldom over one foot below, was one layer of the most recent. In some there were yet a few bits of skeletal material. In these, generally in or just beneath the rock, were knives and arrow points. The knives were mostly triangular or oblong, such as those in the upper right and lower left of the bottom picture in Plate 7. About 10% were made of petrified wood, and one was ground from banded slate. Over 1000 knives were taken from the site.





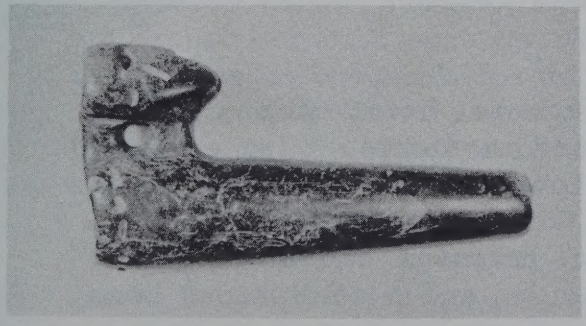
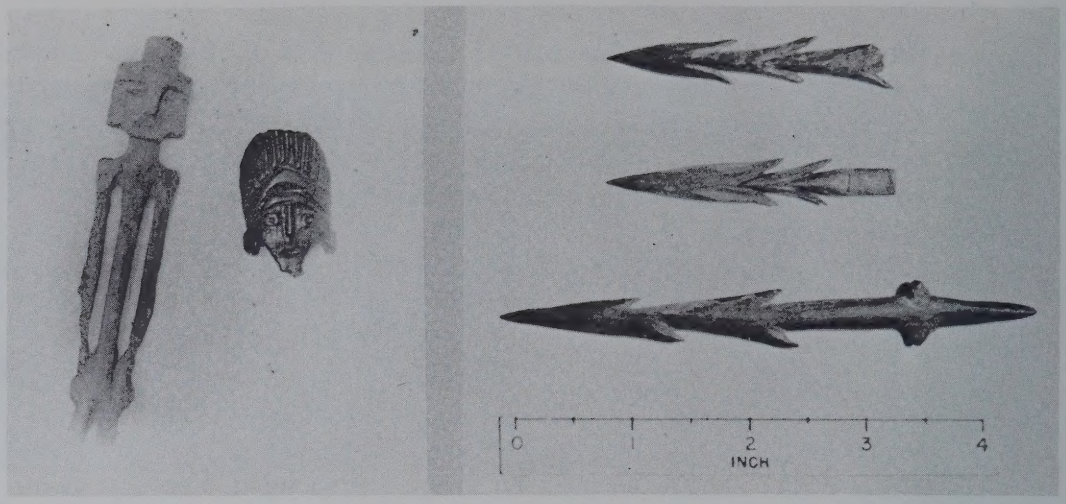
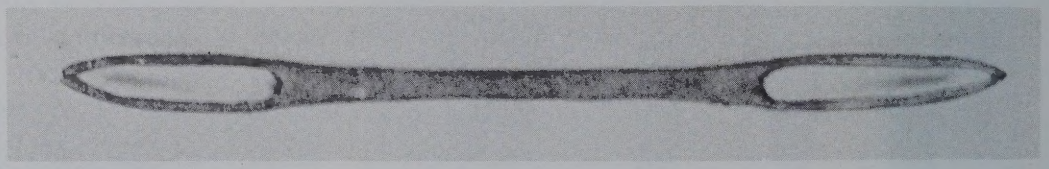


PLATE No. 14

PIPES. Top, carved pipes from the Leachman site. Left below, typical pipes from Wakemap. Right, tube pipes, Maybe site. Next to bottom, carved pipe from Five Mile Locks. Bottom, unusual double pipe from Maybe site; both parts are complete and separate.





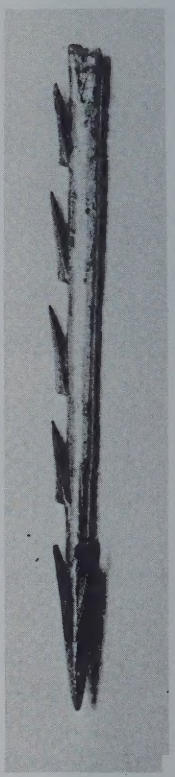


PLATE No. 15

Bone implements and art work from Wakemap Mound. Upper left, pin or head scratcher, 5 inches long, found near bedrock. Lower, pin or awl, 8 1/2 inches long. Upper center, human head carvings from the 15 foot depth. Right, harpoons and arrow point. Next below, bone shuttle, and miscellaneous bone implements.

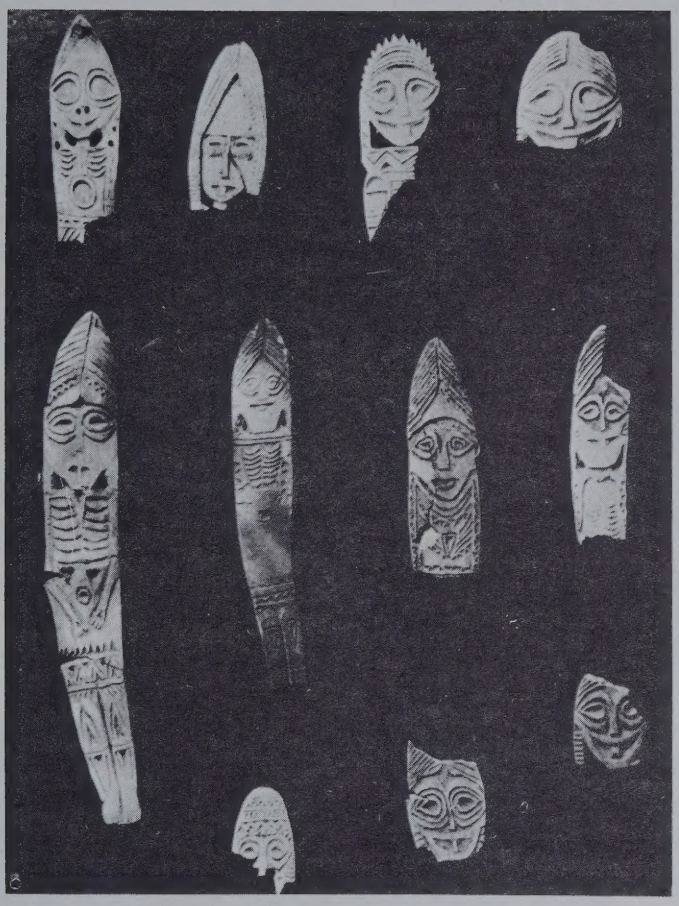


PLATE No. 16

Bone and antler carvings, Leachman Site.

The lower level of graves were two to six feet deep, and in these there was no skeletal material except an occasional flake, and sometimes a dark stain in the silt. Apparently the graves were dug with slight respect for those already there, as there was considerable mixing; perhaps they were made so far apart in time that the first remains had disappeared. In these were found atlatl weights, knives, arrow points, and many large pieces of green, red, white, and yellow paint. In the top layer the points were generally the long slender Columbia River gem points, of exquisite workmanship and material. In the bottom the points were considerably larger, with long wide tangs. There was, however, so much mixing that both types of points were found throughout the deposit. At the lower edge, where the soil lacked depth, there was no segregation; atlatl weights were found only a foot or so deep. In general, though, the weights were below the burials that appeared to be the later.

In Atlatl Valley, there were only about a dozen stone beads found, and no bone or shell artifacts whatever. There must have been some of the latter at one time, but they had decayed away over the centuries. One of the stone beads was found in an early burial, of which there was no sign except a discoloration of the soil. It was one inch

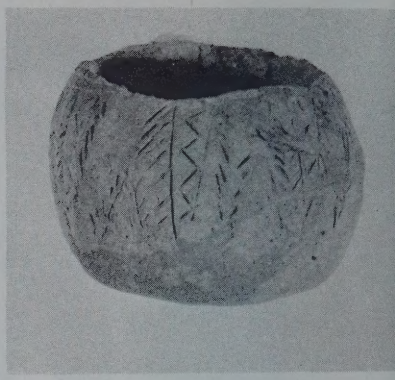
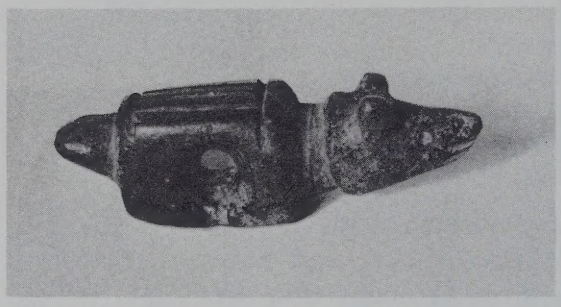
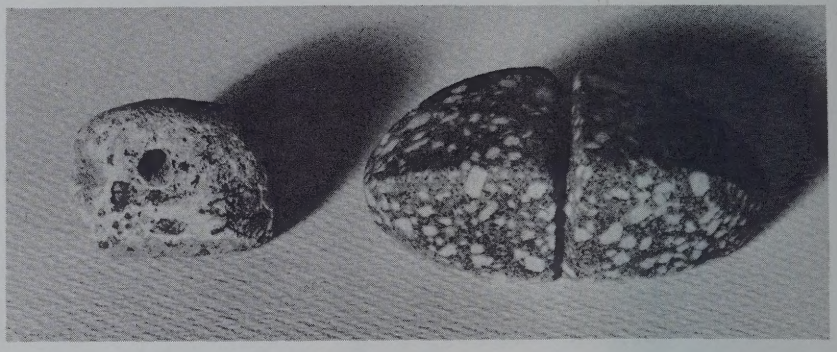
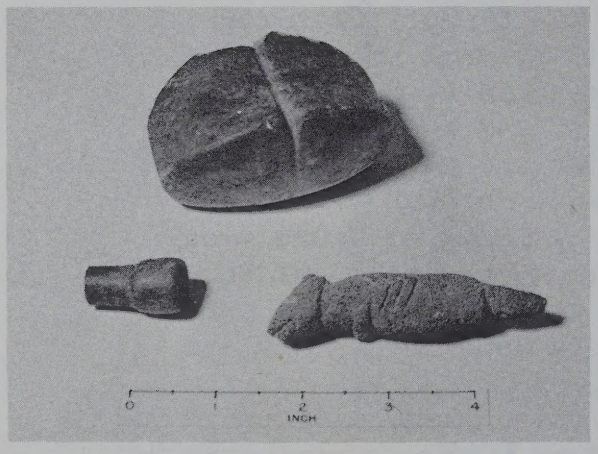


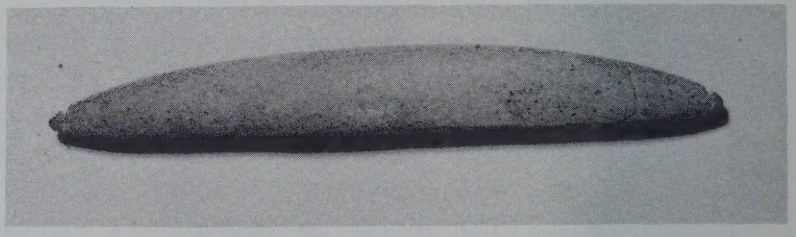
PLATE No. 17

Left, clay effigies and right, clay mortar from Wakemap Mound.









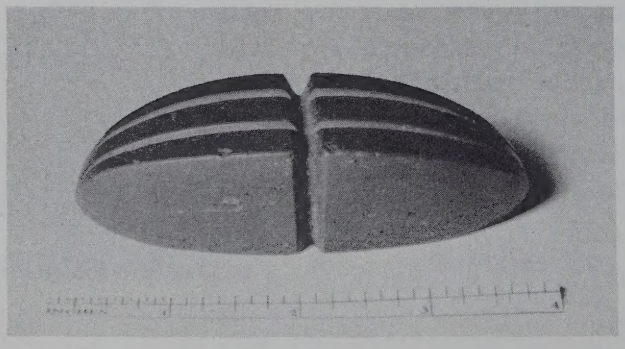


PLATE No. 18

ATLATL WEIGHTS. Top, carved weight from the Atlatl Valley site. Right, red Catlanite, Congdon site. Bottom, left, cache one foot above bedrock in Wakemap Mound, atlatl weight, pipe, and animal effigy. Bottom, right, atlatl weight with end notches, Maybe site.

long, with deep parallel lines inscribed longitudinally, beautifully made and polished. Beads must have been worn early in the culture along the Columbia.

Several caches of arrow points were excavated. These lay side by side, as though buried in a pouch. They were not attached to arrows when placed there, as the points were not oriented the same way. In some of the caches there were large, small, and triangular points together, and sometimes an atlatl weight. With one of the longest, most perfect points an atlatl weight was found. The two lay close together, but mixing during excavation for a burial may have brought them together.

There were a few heavy stone pieces found in Atlatl Valley. Hand mauls, generally plentiful in a burial site, were scarce, only one or two being found. Pestles, too, compared to other sites, were rare. In one small area 19 stone mortars were found, and occasionally one was uncovered in other places. The heavy stone pieces seemed to be in the top layer exclusively. There were only two zoomorphic stone mortars found, and no purely aesthetic art objects. Pipes, also, were non-existent, except for a few fragments which appeared to have come from the cremations. It is likely that this burial ground was extensively used prior to the advent of the heavy stone working tradition and, if so, must be quite old. From the number of knives found there, it was estimated that there were originally about 5000 graves in the site.

Originally there were four large cremations on the site, all excavated long ago by unknown persons. They were prehistoric, except that a few glass beads were noticed, indicating a terminal date of about 1800. In the lower deposits, beneath the cremations, several pieces of copper were discovered, nearly all corroded completely away, and certainly prehistoric. One of the copper beads found was spectographically and metallurgically analyzed; it proved to be native copper, hand wrought into a hollow, ball shaped bead. Native copper is found in southern Alaska and in the Midwest.

The cremations on the upper edge of the site were directly on the cap rock of the burials beneath. On one of these, where the soil was baked hard by the heat of the cremation fires, a pair of atlatl weights was troweled out. One was a stone weight and one was galena. The stone was solidly embedded in the baked soil but at the base of the galena one there was a tubular soft area in the hard strata, approximately the length of the weight. There is a possibility that the

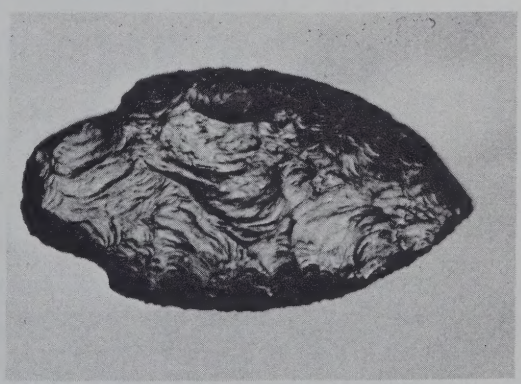


Plate No. 19

Tanged knife from the Atlatl Valley site.

weight was attached to a wooden shaft which was impregnated with metallic salts of the lead, thus preserving a short section that when it eventually decayed left a cavity in the soil.

It should be noted that there is as yet no absolute proof that the strange objects were used as weights on the throwing sticks called atlatls. They are, however, similar to stones from other areas in the United States that were found in situ and known to be so used.

THE MAYBE SITE

A short distance from the Congdon site, to the west and still further from the river, was a large, deep camp midden with superimposed burials. The artifacts recovered there were typologically similar to those from Congdon.

The site was in the form of a low mound. The center was covered with cap rock similar to Atlatl Valley, and in and beneath the rocks were knives and arrow points, stone pestles, adze blades, and an occasional heavy stone tube pipe. Still deeper, large tubular stone beads were uncovered in considerable quantities. Nearly all were made of green soapstone, and the favorite form was one to one and a half inches long, the center about one-half inch in diameter and tapering toward each end. All beads were large. Many of the square ones were three or four inches long.

At a depth of four feet, in the center of the mound, a number of areas stained with red ochre were uncovered. There were neither artifacts nor skeletal material in this layer but it is likely that the stained areas were quite ancient burials. From the deepest parts of the midden, organic material has been removed for possible future carbon 14 dating.

The artifacts from Maybe were very similar to those from the nearby Congdon site. In each there were atlatl weights, heavy stone carvings, thick tube pipes, oblong chipped knives, and stone beads. The only significant difference was that in Maybe there were many more large stone beads.

WS-4, THE ROADCUT SITE

All of the former sites were on the right or Washington bank of the Columbia. The right bank was by far the most densely populated because most of the fishing sites were on that side, and there were large areas in which to camp. On the left bank the cliffs arose close to the river's edge. But there were two places that showed long and heavy occupancy. One of these proved to be the oldest site yet found on the river, and the oldest continuously occupied site yet discovered in the United States.

The Roadcut site is part of the general area called Five Mile Locks that starts at the head of the Long Narrows. Close to the river there

PLATE NO. 20

Wakemap Mound, nearly disappeared beneath the waters of Lake Celilo.

was a midden paralleling Wakemap in structure and apparent age. Back from the river near the cliffs was a large village site where a crew from the University of Oregon under the direction of Dr. L. A. Cressman excavated through 30 feet of midden; the bottom layers were occupied by early man over 10,000 years ago. The carbon-14 date obtained from charcoal was 9,785 years. Since this was a composite date for the whole bottom layer, it is thought that the deepest must be 10,000 to 11,000 years old.

The bottom level of this site was both wind and water deposited. The Columbia carried great volumes of water, much more than at present, and the site was subject to periodic flooding. The people were hunters. Fishing was incidental only for this was during the closing stages of the ice age and probably the salmon had not yet started their prodigious runs. Tools were crude, mostly made by percussion flaking only. Existence was at about the subsistence level; there was no leisure time and all effort was expended on food gathering.

This primitive culture was gradually changing and after 3000 or 4000 years had learned to make bolas, grooved stones attached to cords which, when cast into a flock of birds, would entangle them. The atlatl was being used, and knives and points were being made by pressure as well as percussion flaking. Fish and birds were plentiful and the more numerous artifacts indicated an increased population. Bones of an extinct condor were found in this layer, as well as many other varieties of birds, and fish, animal, and mollosk remains were plentiful. Parts of this deposit were laid down during the altithermal, a long dry hot period that started about 7500 years ago, and

PLATE No. 21

Left, whalebone club, Harrison site.
Double mortar, Maryhill Museum.

lasted about 3000 years. The lakes and marshes of the Great Basin were drying up, forcing the inhabitants to move.

This deposit was overlaid with a layer of hardpan about four feet deep, containing scattered artifacts. Above it was a deep stratum of wind deposited soil dating back 6000 years. As the altithermal was drawing to a close, living conditions improved and the culture expanded. Better chipped tools were being made, and paint was used for decoration. Later, heavy stone pieces--mortars, pestles and mauls--appeared. The rich culture that produced the monumental art work found in the Columbia River valley was established, to flourish until the white invasion late in the eighteenth century.

PLATE No. 22

Fishing at Celilo Falls.

—Photo by Archie W. McKeown

BIBLIOGRAPHY

Cressman, Dr. L. S., "Petroglyphs of Oregon", University of Oregon Publications in Anthropology, 1937.

Osborne, Dr. Douglas, "Excavations in the McNary Reservoir Basin", Smithsonian Institution, Bureau of American Ethnology Bulletin 166

Spier, Leslie and Sapir, Edward, "Wishram Ethnography", University of Washington, 1930.

Strong, Schenck, and Steward, "Archaeology of The Dalles-Deschutes Region", University of California Press, 1930.

Thwaites, Rueben Gold, "The Original Journals of Lewis and Clark", The Arthur F. Clark Co., 1905.

Unpublished Manuscripts: Caldwell, Warren, Ph.D. Thesis.
Cressman, Dr. L. S., Report on Sites WS 1 and WS 4.

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